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10 CFR 52.3

September 28, 2010

UN#10-250

ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

NRC Program Manager: Tanya Ford
Mail Stop: 10E50M (TWFN) Rockville Pike

Subject: UniStar Nuclear Energy, NRC Docket No. 52-016
Request for Review and Approval of UniStar Topical Report for the Use of High Density Polyethylene (HDPE) Pipe in ASME Section III, Class 3, Seismic Category I, Safety-Related Buried Water Pipe Applications, UN-TR-10-001-NP.

UniStar Nuclear Energy (UNE) requests NRC review and approval, under the NRC's licensing topical report program, of the enclosure: UN-TR-10-001-NP, "UniStar Topical Report for the Use of High Density Polyethylene (HDPE) Pipe in ASME Section III, Class 3, Seismic Category I, Safety-Related Buried Water Pipe Applications" issued September 28, 2010.

The attached Topical Report proposes an alternative material for buried steel piping in low temperature and pressure systems utilizing piping made from PE4710 high density polyethylene. The Construction Code of record for the US EPR™ piping and pipe support design does not provide rules for design, fabrication, installation, examination and testing of piping constructed with polyethylene material. Therefore, this request is for approval of the use of PE4710 HDPE piping as an alternative to steel piping in buried low temperature and pressure systems designed to ASME Code Class 3 requirements.

The Topical Report provides design, fabrication, installation, examination and testing requirements for piping constructed with HDPE material. The design methods and acceptance criteria provide adequate assurance that the piping systems will perform their safety-related

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functions under all postulated combinations of normal operating conditions, system operating transients, and seismic and other dynamic events. PE 4710 HDPE piping provides enhanced corrosion/erosion resistance and hydraulic properties resulting in improved system performance and reliability. As a result, the use of PE4710 HDPE piping in accordance with this Topical Report will provide an improved level of quality and safety compared with steel piping.

The data presented in this Topical Report indicates that HDPE pipe under the prescribed service conditions is suitable for a design life in excess of 40 years. However, approval for use of HDPE piping identified herein is only requested for a period of 40 years, consistent with the license term of Combined License (COL) applications.

It is noted that a licensee may apply for license renewal after the initial 40 year license expires using the rules described in 10 CFR Part 54. If COL renewal is proposed in the future, the integrity of the HDPE piping systems will be evaluated at that time within the license renewal process as part of an integrated plant assessment.

UNE requests that the NRC issue a Safety Evaluation Report (SER) that approves this Topical Report for use by UniStar and its partners in the design and construction of US EPR™ nuclear power plants. UNE and its partners would like the option to use HDPE piping and reference the Topical Report in their respective Combined License Applications, as applicable. UNE requests that the NRC complete its review of the enclosed report and issue the SER by September 2011, in order to support the detailed design schedule for Calvert Cliffs Nuclear Power Plant 3.

Approval of the enclosed Topical Report does not require a change to the Standard Technical Specification (STS).

There are no regulatory commitments identified in this letter. This letter and its enclosure do not contain any proprietary or sensitive information.

If there are any questions regarding this transmittal, please contact me at (410) 470-4205 or Mr. Wayne A. Massie at (410) 470-5503.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on September 28, 2010

A handwritten signature in black ink, appearing to read 'Greg Gibson', with a stylized flourish at the end.

Greg Gibson

Enclosure: UniStar Topical Report for the Use of High Density Polyethylene (HDPE) Pipe in ASME Section III, Class 3, Seismic Category I, Safety-Related Buried Water Pipe Applications, UN-TR-10-001-NP

cc: Surinder Arora, NRC Project Manager, U.S. EPR Projects Branch

GTG/RLS/mdf

Laura Quinn, NRC Environmental Project Manager, U.S. EPR COL Application (w/o enclosure)
Getachew Tesfaye, NRC Project Manager, U.S. EPR DC Application (w/o enclosure)
Loren Plisco, Deputy Regional Administrator, NRC Region II (w/o enclosure)
U.S. NRC Region I Office (w/o enclosure)

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Enclosure

UniStar Topical Report for the Use of High Density Polyethylene (HDPE) Pipe in ASME Section III, Class 3, Seismic Category I, Safety-Related Buried Water Pipe Applications